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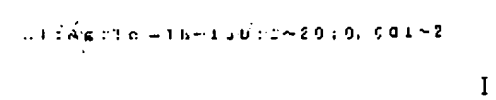
(54) NEGATIVE ELECTRODE ALLOY FOR LITHIUM SECONDARY BATTERY AND LITHIUM SECONDARY BATTERY

(57)Abstract:

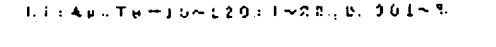
PURPOSE: To enhance electromotive force, charging/discharging capacity, energy density, and lengthen charging/discharging cycle life by using a Li-Ag-Te system alloy having a specified composition range in a negative electrode.

CONSTITUTION: The composition of a negative electrode alloy is preferably represented by formulas I, II, and III. By the γ1 phase of a Li-Ag system alloy, which relates to absorption/desorption of lithium, of a Li-Ag-Te system alloy, discharging capacity is maintained for a long time and charging/discharging cycle life is lengthened. By an intermetallic compound such as Ag2Te and Li2Te, crystal grains are made fine, diffusion of lithium and silver is accelerated, absorption/desorption

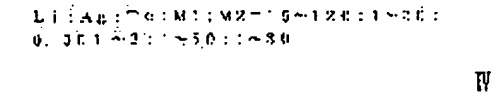


I

II



III



IV

efficiency of lithium is enhanced. By containing M1-M2 system alloy composition represented by formula IV, deterioration of negative electrode attendant on absorption/desorption of lithium is retarded by the binding effect of this intermetallic compound. Alloying is made by conventional melting process or vapor deposition process. (In formula IV, M1 is a 3B-5B group metal, and M2 is a transition metal excluding Ag).

LEGAL STATUS

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